

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

The January 16, 1997 Office Action and the comments of the Examiner have been carefully considered. In response, claims have been cancelled, amended and added, and remarks have been set forth below in a sincere effort to define more clearly applicant's invention and to place the present application in form for allowance. Specifically, applicant has cancelled claims 31-33, 35, 37, 39 and 41, amended claims 34, 36, 38 and 40, and added claim 42. Each of the pending claims are supported by the application as originally filed. Therefore, no new matter has been added as a result of the amendments.

Inasmuch as the present Amendment raises no new issues for consideration, and, in any event, places the present case in condition for allowance or better condition for consideration on appeal, its entry under the provisions of 37 CFR 1.116 is respectfully requested.

REJECTION UNDER 35 USC 112, FIRST PARAGRAPH

In the Office Action, the Examiner rejects claims 38-41 under the first paragraph of 35 USC 112. Specifically, the Examiner states that "storing means ROM 324 does not output minimum value L and maximum value K".

Claims 37 and 39 have been cancelled. With regard to claims 38 and 40, applicants respectfully direct the Examiner to page 45, line 19 - page 50, line 10, and specifically to page 48, line 20 - page 49, line 21 which provides support for the limitations recited in claims 38 and 40. In view of the foregoing citation to the specification, it is respectfully requested that the rejection of claims 38 and 40 under the first paragraph of 35 USC 112 be withdrawn.

THE PRESENT INVENTION

The object of the present claimed invention is to provide a liquid crystal display apparatus capable of displaying gray-scale image data on a liquid crystal panel with high response speed with respect to an input video signal.

According to the present claimed invention, this object is realized by providing a first storage means for storing current gray-scale image data of a current frame, second storing means for storing previous gray-scale image data of a previous frame, third storage means for receiving and comparing signals provided by the first and second storing means and storing a plurality of gray-scale image data based upon signals provided thereto, and means for generating a liquid crystal driving signal according to gray-scale image data provided from the third storing means wherein the liquid crystal driving signal generating means includes means for reading out the plurality of gray-scale image data from the third storing means.

CLAIMS

In response to the Final Office Action, new claim 42 has been added in order to more clearly define the storing means. New claim 42 defines the storing means as including two input signals and wherein the storing means provides one output signal based upon the two input signals. The two input signals are two data signals supplied to ROM (77) from SOM-A(75) and SOM-B(76) or alternatively, two data signals supplied to ROM (87) from SOM-C(85) and SOM-D(86). Applicants respectfully urge that new claim 42 more clearly sets forth and defines the differences between the present invention and cited references.

REJECTIONS UNDER 35 USC 102 AND 35 USC 103

In the Office Action, claims 32 and 34 are rejected as being anticipated by Japanese Patent No. 2-113476. In addition, claims 31, 33 and 35-41 are rejected as being obvious and unpatentable over Japanese Patent No. 2-113476 and USP 5,185,602 (Bassetti, Jr. et al).

The Examiner does not appear to appreciate the differences between the present claimed invention and Japanese Patent No. 2-113476. In response to the October 10, 1996 Amendment and the arguments presented therein, the Examiner states on page 7 of the January 16, 1997 Office Action that the Casio System of the Japanese Patent includes a signal generator 23 which corresponds to the claimed storing means for storing gray-scale data. However, the signal generator 23 of the prior art Casio reference

is a gradation signal generation circuit which is used only for converting input digital data into a liquid crystal drive voltage signal. The signal generator 23 of the prior art Casio reference does not have a memory function. Therefore, there is no implicit suggestion of a memory in the Casio reference as asserted by the Examiner. The signal generator 23 of the prior art Casio reference instead corresponds to the signal electrode driver 23, 24 shown in FIG. 8 of the present application. The storing means of the present claimed invention which is not taught, disclosed or suggested in the prior art Casio reference, instead corresponds to ROMs 77 and 87 as shown in FIG. 8 of the present application.

Bassetti, Jr. discloses a method and apparatus for producing perception of high quality gray-scale shading on digitally commanded displays, Bassetti, Jr. discloses the use of adjacent pixel data of the same frame. In contrast, the present invention uses image data of two different frames as stated in the Response filed on October 10, 1996. Thus, Bassetti, Jr. does not disclose, teach or suggest storing means for receiving and comparing two input signals and for storing a plurality of gray-scale data.

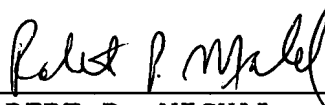
As should be clear from the foregoing, the storing means recited in new claim 42 is not taught, disclosed or suggested by any of the cited references, taken singly or in any logical combination, under 35 USC 102 as well as under 35 USC 103.

Claims 34, 36, 38 and 40 depend from claim 42 and recite further features of the invention which also distinguish over the cited prior art discussed hereinabove.

Entry of the amendment, allowance of the claims, and the passing of the application to issue with claims 34, 36, 38, 40 and 42 are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,



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Enc. - Petition for Extension of Time